
SECTION 15446 - SUMP PUMPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes sump pumps for the building storm drainage systems.

1.3 SUBMITTALS

- A. Product Data: Include performance curves, furnished specialties, and accessories for each type and size of pump indicated.
- B. Maintenance Data: For each type and size of pump specified to include in maintenance manuals specified in Division 1.

1.4 QUALITY ASSURANCE

- A. Product Options: Drawings indicate size, profiles, connections, and dimensional requirements of pumps and are based on specific manufacturer types and models indicated. Other manufacturers' pumps with equal performance characteristics may be considered. Refer to Division 1 Section "Substitutions."
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Retain shipping flange protective covers and protective coatings during storage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Submersible Sump Pumps:

- a. Chicago Pump Co.
- b. Crane Pumps & Systems, Inc.; Weinman Div.
- c. Ebara International Corp.; Standard Pump Div.
- d. Federal Pump Corp.
- e. Gorman-Rupp Co.
- f. Goulds Pumps, Inc.
- g. Grundfos Pumps Corp.
- h. PACO Pumps, Inc.
- i. Sta-Rite Industries, Inc.
- j. Weil Pump Co.
- k. Zoeller Pump Co.

2.2 SUMP PUMPS, GENERAL

- A. Description: Factory-assembled and -tested, single-stage, centrifugal, end-suction sump pump units complying with UL 778. Include motor, operating controls, and construction for permanent installation.
- B. Discharge Pipe End Connections **NPS 2 (DN50)** and Smaller: Threaded. Pumps available only with flanged-end discharge pipe may be furnished with threaded companion flanges.
- C. Motors: Single speed, with grease-lubricated ball bearings, and non-overloading through full range of pump performance curves.
- D. Finish: Manufacturer's standard paint applied to factory-assembled and -tested units before shipping.

2.3 COMPACT, SUBMERSIBLE SUMP PUMPS

- A. Description: Simplex, submersible, direct-connected sump pump.
1. Casing: Cast iron with metal inlet strainer. Include discharge companion flange suitable for plain-end pipe connection arranged for vertical discharge.
 2. Impeller: Cast iron, bronze, brass, or stainless steel.
 3. Casing: Cast iron with inlet strainer and discharge companion flange suitable for plain-end pipe connection arranged for vertical discharge.
 4. Impeller: Cast iron or bronze.
 5. Pump and Motor Shaft: Steel, with factory-sealed, grease-lubricated ball bearings.
 6. Seal: Mechanical type.
 7. Motor: Hermetically sealed, capacitor-start type; with built-in overload protection; and three-conductor waterproof power cable of length required, with grounding plug and cable-sealing assembly for connection at pump.
 8. Pump Discharge Piping: Field fabricated, ASTM A 53, Schedule 40, PVC.
 9. Cover: With holes and gaskets.
 10. Controls: NEMA 250, Type 6, 120-V ac, micropressure or mercury-float switches, mounted on discharge piping.

2.4 SUMP PUMP BASINS

- A. Description: Factory fabricated with sump, pipe connections, and separate cover.
- B. Basin Sump: Fabricate watertight, with sidewall openings for pipe connections.
1. Material: Fiberglass.
 2. Material: Steel, with bitumastic coating.
 3. Material: Cast iron.
 4. Material: Fiberglass, polyethylene, steel with bitumastic coating, or cast iron.
- C. Basin Cover: Fabricate with openings with gaskets, seals, and bushings, for access, pumps, , discharge piping, and power cables.
1. Material: Fiberglass.

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2. Material: Steel, with bitumastic coating.
 3. Material: Cast iron.
 4. Material: Steel, with bitumastic coating or cast iron.
 5. Material: Fiberglass, polyethylene, steel with bitumastic coating, or cast iron.

2.5 GENERAL-DUTY VALVES

- A. Refer to Division 15 Section "Valves" for general-duty gate, ball, butterfly, globe, and check valves. Use valves specified for domestic water, unless otherwise indicated. Include features and devices indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine roughing-in of plumbing piping systems to verify actual locations of piping connections before pump installation.

3.2 EARTHWORK

- A. Excavating, trenching, and backfilling are specified in Division 2 Section "Earthwork."

3.3 INSTALLATION

- A. Install pumps according to manufacturer's written instructions.
- B. Install pumps and arrange to provide access for maintenance.
- C. Support piping so weight of piping is not supported by pumps.
- D. Submersible Sump Pumps: Set pumps on basin, pit, or sump floor. Make direct connections to storm drainage piping.
- E. Sump Pump Basins: Install basins and connect to storm drainage piping. Brace interior of basins according to manufacturer's written instructions to

prevent distortion or collapse during concrete placement. Set basin cover and fasten to basin top flange. Install so top surface of cover is flush with adjacent floor.

3.4 CONNECTIONS

- A. Storm drainage piping installation requirements are specified in Division 15 Section "Drainage and Vent Piping." Drawings indicate general arrangement of piping and specialties. The following are specific connection requirements:
 - 1. Install discharge pipe sizes equal to or greater than diameter of pump nozzles, and connect to storm drainage piping.
 - 2. Install swing check valve and gate or ball valve on each sump pump discharge. Include spring-loaded or weighted-lever check valves for piping **NPS 2-1/2 (DN65)** and larger.
- B. Install electrical connections for power, controls, and devices.
- C. Electrical power and control components, wiring, and connections are specified in Division 16 Sections.

3.5 ADJUSTING

- A. Pump Controls: Set pump controls for automatic start, stop, and alarm operation as required for system application.

3.6 COMMISSIONING

- A. Final Checks before Starting: Perform the following preventive maintenance operations:
 - 1. Verify that each pump is free to rotate by hand. Do not operate pump if it is bound or drags, until cause of trouble is determined and corrected.
 - 2. Verify that pump controls are correct for required application.
- B. Starting procedure for pumps with shutoff power not exceeding safe motor power is as follows:
 - 1. Start motors.
 - 2. Check general mechanical operation of pumps and motors.

BLACKFEET COMMUNITY HOSPITAL
Expansion & Renovation, Phases 1 & 2
Browning, Montana

C168
102-96-0005
BI7BF079H7

END OF SECTION 15446

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